AIR FORCE

QUALIFICATION TRAINING PACKAGE (AFQTP)

for

UTILITIES SYSTEMS

(3E4X1)

MODULE 10

TECHNICAL PUBLICATIONS

TABLE OF CONTENTS

MODULE 10

TECHNICAL PUBLICATIONS

Career Field Education and Training Plan (CFETP) references from 1 Apr 97 version.

OPR: HQ AFCESA/CEOT

Certified by: HQ AFCESA/CEO
(Colonel Lance C. Brendel)

Notice. This AFQTP is _NOT_ intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

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INTRODUCTION

Before starting this AFQTP, refer to and read the "Trainee/Trainer Guide" located on the AFCESA Web site **http://www.afcesa.af.mil/**

   AFQTPs are mandatory and must be completed to fulfill task knowledge requirements on core and diamond tasks for upgrade training. *It is important for the trainer and trainee to understand* that an AFQTP *does not* replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

   AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.

MANDATORY minimum upgrade requirements:

Core task:
>   AFQTP completion
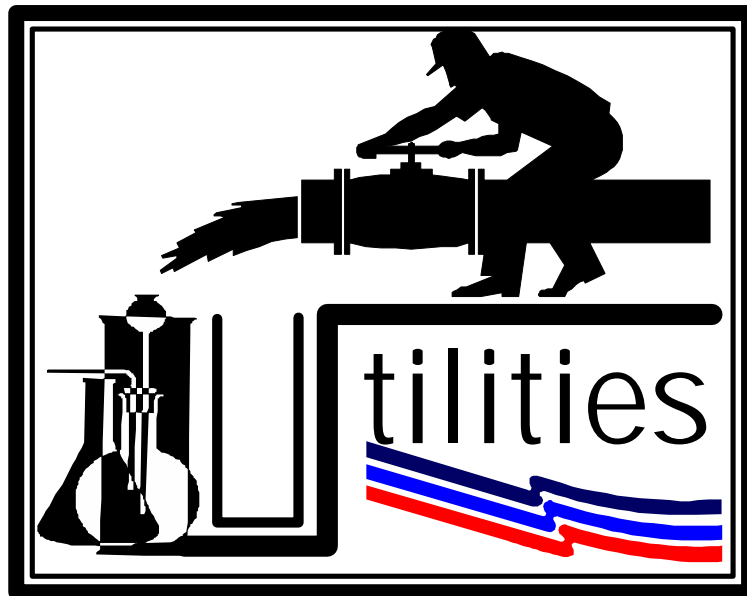>   Hands-on certification

Diamond task:
>   AFQTP completion
>   CerTest completion (80% minimum to pass)

 Note: *Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.*

Put this package to use. Subject matter experts under the direction and guidance of HQ AFCESA/CEOT revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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LOCATE DESIRED INFORMATION IN

MODULE 10   **AFQTP UNIT 2**

USE TECHNICAL PUBLICATIONS TO PERFORM MAINTENANCE, OPERATIONS, AND TROUBLESHOOTING (10.2.4.)

USE TECHNICAL PUBLICATIONS TO PERFORM MAINTENANCE, OPERATIONS, AND TROUBLESHOOTING

Task Training Guide

STS Reference Number/Title:	10.2.4., Use technical publications to perform maintenance, operations, and troubleshooting
Training References:	• CDC 3E451 • CD-ROM (AFS Specific Publications 3E0X2-11C) • 00-5-1 (Section I, II, and IV) • 00-5-2 (Section I, II, and IV)
Prerequisites:	• Possess as a minimum a 3E431 AFSC
Equipment/Tools Required:	• Technical publications (i.e., manuals, T.O.'s, manufacturer's guides.)
Learning Objective:	• Trainee will learn to use technical publications to perform maintenance, operations, and troubleshooting

Samples of Behavior:	• Trainee will be able to:
	  • Use Air Force Index 2 (AFIND2)
	  • Locate information in standard publications
	  • Use a computer with internet access to find information in standard publications, IF AVAILABLE.
	  • Use technical publications to perform maintenance, operations, and troubleshooting

Notes:	

USE TECHNICAL PUBLICATIONS TO PERFORM MAINTENANCE, OPERATIONS, AND TROUBLESHOOTING

Background: AF publications are used to announce policies, prescribe procedures, and furnish the instructions you need to do your job properly. The publications you'll be dealing with are Standard Publications (directive and non-directive). Directive publications must be followed; however, non-directive ones may be modified to fit the circumstances. In order to find the publication you will need, first look in AF index 2, or "AFIND 2". Here is where the up-to-date information on the correct number and title of current and obsolete publications is listed (For the most up-to-date information Access HTTP://AFPUBS.HQ.AF.MIL/ on the Internet). You can find a copy of AFIND 2 in the Operations Flight's secretary's office, or squadron orderly room. Most publications needed in our everyday job can easily be found on your computer systems network drive (ask you system administrator for help if needed).

To locate desired publication using AFIND2 follow these steps:

Step 1: Locate AFIND2.
> The index is usually located in the unit publication library, this may be the unit orderly room, or in the operations secretary's office.

Step 2: Determine the section you need to look in.
> AFIND2 is divided into sections, according to the type of publication you need. For example, Section C contains a listing of all the Air Force Instructions (AFIs), which provide procedural guidance to implement Air Force Policy.

Step 3: Locate subject.
> In AFIND2 the sections are broken down into a list format by series as seen in Figure 1 below.

Subject	Series number	Subject	Series number
Operations	10	Medical Command	40
Flying Operations	11	Health Services	41
Space, Missile C4	13	Medical	44
Intelligence	14	Nursing	46
Weather	15	Dental	47
Operations Support	16	Aerospace Med.	48
Logistics	20	Law	51
Maintenance	21	Chaplain	52
Supply	23	Standardization	60
Transportation	24	Scientific R&D	61
Logistics Staff	25	Dev. Engineering	62
Security	31	Acquisition	63
Civil Engineering	32	Contracting	64
Communications	33	Financial Mgmt.	65
Services	34	Special. Invest.	71
Public Affairs	35	History	84
Personnel	36	Command Policy	90
Information Mgmt	37	Safety	91
Manpower	38	Test & Evaluation	99

Figure 1, AFIND 2.

NOTE:
  Remember that anything dealing with Civil Engineer is found in the AFI 32 series of publications.

Step 4: Go to the appropriate series.
Look at the titles of the series listed. Look down the list until you come to the series that contains the type of information that you need. For example, Civil Engineering falls under series 32.

Step 5: Find the appropriate publication.
Look down the series listing until you find, for example, AFI 32-1064, Electrical Safe Practices. Now you know the publication you need to find the information you want. What about using a computer? Yes, you can look up standard publications on the Internet.

Step 6: Access HTTP://AFPUBS.HQ.AF.MIL/ on the Internet (IF AVAILABLE).
When the US Air Force Directorate of Departmental Publication home page comes up, click on Electronic Air Force Forms and Publications. When this screen comes up, click on Electronic Publications.

Step 7: Search the index.
The next screen that comes up is the index. Scroll to the appropriate series, for example, the 91 series, Safety. Click on the short title of the series. This will bring up the list of all the AFIs in the 91 series.

Step 8: Bring up the publication.
Click on the title of the publication, and in a short time the publication will be displayed on the computer. This is the best way to ensure you are referring to the most up to date version of the publication.

Technical Orders: For many pieces of Air Force equipment, the operation and maintenance of the equipment is covered by technical orders (TO's). The TO indexes provide a basis for determining requirements for updating TO's files and records. All organizations using TO's must have TO 0-1-01, the "index of indexes".   It lists information applicable to all indexes in its preface. TO 0-2-1 is the alphabetical index. It is divided into two parts: Part 1, Equipment Names to Technical Order Group, and Part 2, Technical Order Groups to Equipment names.

To perform the task, follow these steps:

Step 1: Use numerical index.
Look in TO 0-1-01, and find the index for the category you need. For example, if you are looking for information on fuel handling equipment, you will find index 0-1-37 covers TO's that refer to fuel, oil, propellant handling and associated equipment. When you go to the 37 series TO index, you will find TO's on a wide range of subjects, including TO 37-1-1 General Operation and Inspection of Installed Fuel Storage and Dispensing Equipment.

Step 2: Use alphabetical index.
> Another method is to use the alphabetical index. Simply look through the alphabetical index and find the topic that you want, and the alphabetical index will refer you to the proper TO.

Step 3: Locating the right TO.
> Now all you have to do is locate the TO that you need. If it is a TO that pertains to equipment in use in your shop, then the TO should be available in the shop. Some units maintain a TO library containing all the TO's that pertain to the operation of the unit.

Step 4: Using the TO.
> When you find the TO that you need, simply open it up and refer to the table of contents. If you need to know how to use a piece of equipment, look at the "operating instructions" section. If you need to fix the equipment, find the "repair" section. A TO is the final authority on a subject. If there is a TO for a particular piece of equipment that you are using, the TO must be followed.

Commercial publications: In addition to Air Force standard publications and technical orders, there is another important source of information that you will need. Commercial publications are often needed if there is no standard publication or technical order available for a piece of equipment. There are as many different types of commercial publications as there are companies. You will find catalogs, pamphlets, manuals, or books. They contain information on assembly, installation, operation, service, overhaul, troubleshooting, or parts identification. The Cla-Val manual is an example of a commercial publication commonly found in the Utilities Systems Maintenance shop.

To perform the task, follow these steps:

Step 1: Locate the commercial publication.
> Commercial publications should be located in the Utilities Systems Maintenance Shop. Locate the appropriate manual, for example, *Service Training Manuel, Backflow Preventers Book No. 6*, CLA-VAL Company.

Step 2: Locate information in commercial publication.
> The publication will usually have an index, or a table of contents. Sometimes they will be divided into different sections such as: instructions, usage, parts, and repair procedures. In our example, we want to find out how to troubleshoot a double check valve Find the troubleshooting guide, and it lists symptoms, probable causes, and recommended remedies.

Step 3: Obtain commercial publication.
> Sometimes, you may not have the right commercial publication. There are several ways to get information that you may need. If you need something such as a current price list, you can often call the company direct and have it mailed, faxed or e-mailed to you. Many companies will send manuals on request, but be careful, make sure it is free! If you obligate Air Force funds without going through the proper channels, you can get in

trouble! Another source of information is the Internet, if you have access to it. Many companies have web pages that are very informative.

Step 4: Filing commercial publications.

Keeping publications filed in the designated area saves time looking for the information. Follow the shop's established filing policy when returning the publication.

Once you've found the publication you want, you're now ready to perform maintenance, operations, and troubleshooting various systems, equipment, or facilities. The table of contents will identify the page(s) for your task. Once you locate the page, you should see step-by-step procedures on maintenance, operations, and troubleshooting for whatever you're doing.

Review Questions
for
Use Technical Publications to Perform Maintenance, Operations, and Troubleshooting

Question	Answer
1. What type of publication are we mainly concerned with?	a. Standard manuals b. Recurring periodicals c. Standard publications d. Manufacturers publications
2. What is the index of all indexes?	a. AFIND 1 b. AFIND 2 c. AFI 32-1064 d. AFI 36-2903
3. What series contains Civil Engineer AFIs?	a. 30 b. 31 c. 32 d. 33
4. Where would you find a list of all current and obsolete publications?	a. AFIND 2 b. AFIND 10 c. OB-PUBS 2 d. OB-PUBS 10
5. Using the internet is best way to ensure you get the most up-to-date publications?	a. True b. False
6. Where would you first look to find the procedures to perform a task?	a. The index b. The directory c. The glossary d. The table of contents
7. Where are TO numbers and titles found?	a. TO indexes b. TO 32-1-1 c. AFQTP a. 85-16
8. A TO is only a suggested way for maintaining, operating, and troubleshooting a piece of equipment?	a. True d. False
9. Commercial publications should be kept where?	a. In the operation's secretary's office b. In the contracting office c. In the Utilities Systems shop b. In the Superintendent's office
10. If a commercial publication is not readily available where might you find the information you need?	a. Orderly room b. Internet c. Manufacturer d. b and c

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USE TECHNICAL PUBLCATIONS TO PERFORM MAINTENANCE, OPERATIONS, AND TROUBLESHOOTING

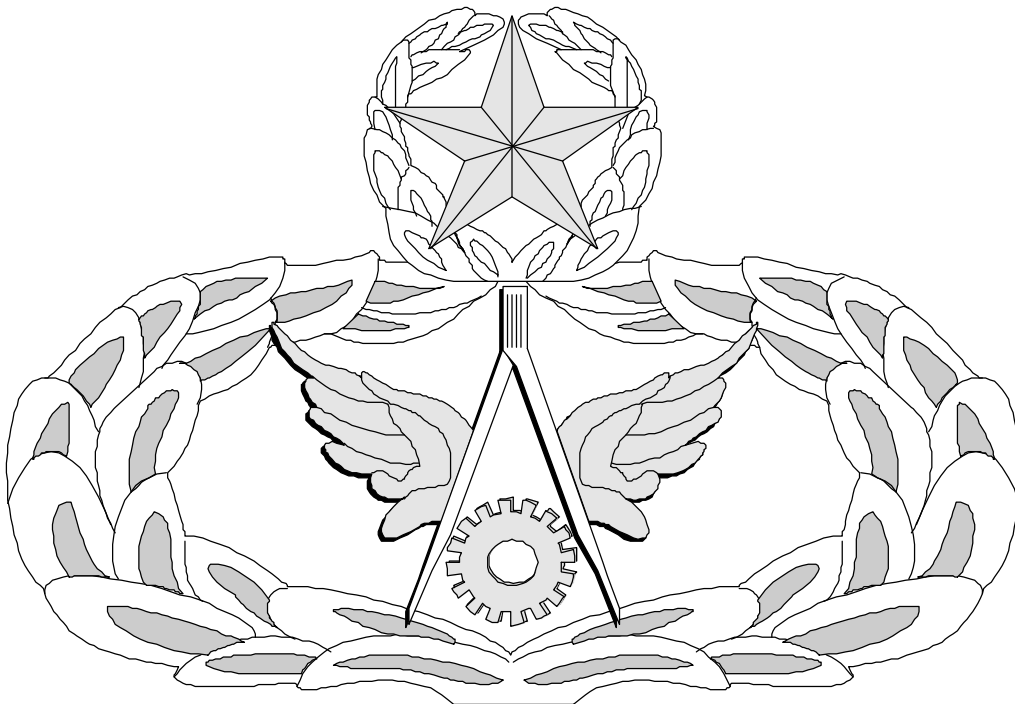| Performance Checklist		
Step	**Yes**	**No**
1. Did the trainee understand basic concept of publications? • Indexes • Technical Orders TO • Commercial Publications		
2. Did the trainee understand basic concept of Indexes? • Located AFIND2. • Determined the section you need to look in. • Located subject. • Went to the appropriate series. • Found the appropriate publication. • Accessed HTTP://AFPUBS.HQ.AF.MIL/ on the Internet (IF AVAILABLE). • Searched the index. • Brought up the publication.		
3. Did the trainee research specific tasks in a Technical Order? • Used numerical index. • Used alphabetical index. • Located the right TO. • Used the TO.		
4. Did the trainee research specific tasks in a Commercial publication? • Located the commercial publication. • Located information in commercial publication. • Obtained commercial publication. • Filed commercial publications.		
5. Did the trainee complete all the questions in QTP? • Score 80% or higher. • Did trainer review and explained all missed questions.		

FEEDBACK: Trainer should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the mind of both the trainee and trainer.

Air Force Civil Engineer

QUALIFICATION TRAINING PACKAGE (QTP)

REVIEW ANSWER KEY

For

UTILITIES SYSTEMS

(3E4X1)

MODULE 10

TECHNICAL PUBLICATIONS

USE TECHNICAL PUBLICATIONS TO PERFORM
MAINTENANCE, OPERATIONS, AND TROUBLESHOOTING

(3E4X1-10.2.4.)

Question	Answer
1. What type of publication are we mainly concerned with?	c. Standard publications
2. What is the index of all indexes?	b. AFIND 2
3. What series contains Civil Engineer AFIs?	b. 32
4. Where would you find a list of all current and obsolete publications?	a. AFIND 2
5. Using the internet is best way to ensure you get the most up-to-date publications?	a. True
6. Where would you first look to find the procedures to perform a task?	c. The table of contents
7. Where are TO numbers and titles found?	a. TO indexes
8. A TO is only a suggested way for maintaining, operating, and troubleshooting a piece of equipment?	b. False
9. Commercial publications should be kept where?	c. In the Utilities Systems shop
10. If a commercial publication is not readily available where might you find the information you need?	d. b and c